



Alabama Research Experiences for Undergraduates (ALREU)

Project Title:

Computer simulations of laser-induced plasmas used in thin film growth of advanced materials

Project Reference Code:

UAB-Camata

Hosting Institution:

University of Alabama at Birmingham

Hosting Institution Location:

The University of Alabama at Birmingham
Department of Physics
Campbell Hall 310,
1300 University Blvd.
Birmingham, AL 35294-1170

Project Description:

The irradiation of a surface with a high-intensity laser pulse leads to a plasma that can be used to create a variety of novel thin film materials. There is currently great interest in using these laser-induced plasmas to grow large-area 2D materials, engineer thin film heterostructures, and access novel non-equilibrium quantum phases of matter. The Quantum Materials Synthesis laboratory at the UAB Department of Physics is seeking one undergraduate intern to apply commercial and in-house developed software packages to multi-physics simulation of plasmas generated during laser irradiation of materials. No prior experience in plasma simulations is required. The intern will learn the fundamentals of plasma physics and laser synthesis of materials and receive training in packages used for simulation. The intern will work closely with experimentalists at UAB to interpret the simulations in conjunction with data acquired in actual laser ablation plasma experiments.

Some background in programming, visualization & data exploitation on Linux and Windows platforms is desirable.

Disciplines:

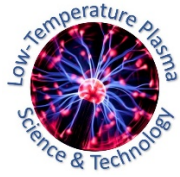
Applied Physics, Physics, Electrical Engineering, Materials Science and Engineering, Mechanical Engineering, Computer Science, Electrical and Computer Engineering, Mathematics, Quantum Chemistry

Name(s) of Mentor(s) and contact information:

Dr. Renato Camata, camata@uab.edu

Internship Coordinator/ HR manager: Charita Cadenhead, charita@uab.edu, 205-975-8076

The name and contact information of personnel at the hosting is provided for further assistance with questions regarding the hosting institution or the project.



Alabama Research Experiences for Undergraduates (ALREU)

Interns will not enter into an employee/employer relationship with the Hosting Site. No commitment with regard to later employment is implied or should be inferred.